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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte AKIRA KUME and KOUJI MINAMI

Appeal 2007-2246
Application 10/670,722
Technology Center 3700

Decided: January 16, 2008

Before TERRY J. OWENS, HUBERT C. LORIN, and
DAVID B. WALKER, *Administrative Patent Judges*.

OWENS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Appellants appeal from a rejection of claims 21-24, 28-30 and 35-38. Claims 25-27 and 31-33 stand withdrawn from consideration by the Examiner. Claims 1-20, 34, 39 and 40 have been canceled.

THE INVENTION

The Appellants claim a jig plate for use with an end face polishing machine, and claim, in combination, the jig plate, the end face polishing machine and an optical connector plug. Claim 21 is illustrative:

21. In combination:

an optical connector plug comprised of a plug housing for supporting a ferrule fixed to an end of an optical fiber and a connecting member connected to an exterior surface of the plug housing, the optical connector plug having a first axis extending along the exterior surface thereof in a longitudinal direction of the connecting member;

an end face polishing machine comprised of a polishing member having a polishing surface for undergoing rotational movement in a first direction of rotation to polish an end face of the ferrule and an end face of the optical fiber during a polishing operation; and

a jig plate comprised of a jig plate body, a mounting part connected to the jig plate body for mounting the jig plate on the end face polishing machine, a holding part formed in a surface of the jig plate body, and a holding member for removably supporting the optical connector plug in the holding part so that the end face of the ferrule and the end face of the optical fiber confront the polishing surface of the polishing member when the jig plate is mounted on the end face polishing machine, the holding member having an engaging portion for detachable engagement with the connecting member of the optical connector plug to removably support the optical connector plug so that during a polishing operation, the ferrule rotates in a second direction of rotation opposite to the first direction of rotation while the end face of the ferrule and the end face of the optical fiber contact the polishing surface of the polishing

member at a preselected angle of inclination and while an axis extending in the direction of inclination of the end face of the ferrule and the end face of the optical fiber coincides with a second axis of the optical connector plug disposed generally orthogonal to the first axis.

THE REFERENCES

Ohno	US 5,738,576	Apr. 14, 1998
Yamada	US 2001/0055459 A1	Dec. 27, 2001

THE REJECTIONS

Claims 21-24, 28-30 and 35-38 stand rejected under 35 U.S.C. § 103 as being unpatentable over Yamada in view of Ohno.¹

OPINION

We affirm the Examiner's rejection.

The Appellants separately argue independent claims 21 and 28 (Br. 7-26), and argue together dependent claims 23, which depends from claim 21, and claim 29, which depends from claim 28 (Br. 26-27). The Appellants' argument regarding claim 28 (Br. 22-26), however, is essentially the same as that presented for claim 21 (Br. 7-22). We therefore limit our discussion to claims 21 and 23. Claim 28 falls for the reasons given regarding claim 21, and claim 29 falls for the reason given regarding claim 23. The other claims fall with the argued claim from which they depend. *See*

¹ A rejection of claims 21, 28, 35 and 37 under 35 U.S.C. § 112, first and second paragraphs, has been withdrawn (Ans. 2).

37 C.F.R. § 41.37(c)(1)(vii)(2007).

Claim 21

Yamada discloses “a ferrule holder assembly for an apparatus for grinding end faces of a plurality of ferrules with optical fibers simultaneously” (§ 0002). In the embodiment in Yamada’s figure 7 an LC-type connector plug (20) (which is the type illustrated by the Appellants (Spec. 12)) has a retaining hook lever (21) and a projection provided at the lever for engaging a projection at the inner surface of an adapter (2) so as to fix connector plug 20 to a ferrule holder board (1) (§ 0040). Yamada indicates that the discussion of the construction described with respect to the SC-type connector plug in figure 3 applies to figure 7. *See id.* Adapter 2 in figure 3 has at its inside a pair of adapter hooks (2a, 2b) for restraining the connector plug (§ 0034).

Ohno discloses “a method and an apparatus for providing an optical fiber connector with a mirror-finished convex tip.” (col. 1, ll. 12-14). Ohno discloses, in the “Background of the Invention” section (col. 1, ll. 20-26):

A predominant implementation for the low loss connection of optical fibers is a PC (Physical Contact) optical connector. The PC optical connector has a ferrule at its end. The end of the ferrule is mirror-finished in a convex tip configuration. This allows the end of an optical fiber received in the ferrule to closely contact the end of another optical fiber.

In the embodiment in Ohno’s figure 2A the ferrule (14) and grindstone (11) rotate in opposite directions.

The Appellants argue that “the engaging portion or adapter hook 2a in Yamada forms part of the adapter 2, not part of the holding member 4” (Br. 11; Reply Br. 4). The Appellants’ connector plug 100 is held in holding member 60 by holding part 51 (fig. 6). Yamada’s indent in pressing plate 4 (fig. 6) corresponds to the Appellants’ holding part, and adapter 2 corresponds to the Appellants’ holding member. The adapter hook 2a, which corresponds to the Appellants’ engaging member (61), is part of the holding member 2 as required by claim 21.

The Appellants question how Yamada would be modified so that ferrule 9 rotates at all, particularly in a direction opposite to the direction of rotation of polishing plate 14 (Br. 13). That modification would be done using the conventional technique shown in Ohno’s figure 2A.

The Appellants argue that Ohno teaches that the conventional device has problems (Br. 13-14; Reply Br. 6-7). That argument is not persuasive because the problem is the requirement of frequent replacement of the sheet and abrasive grain (col. 1, ll. 46-55), not that the device does not work.

The Appellants argue that neither Yamada nor Ohno discloses all of the limitations in claim 21 (Br. 16). That argument is not well taken because the Appellants are attacking the references individually when the rejection is based on a combination of references. *See In re Keller*, 642 F.2d 413, 426 (CCPA 1981); *In re Young*, 403 F.2d 754, 757-58 (CCPA 1968).

The Appellants argue that Yamada does not disclose a polishing angle of inclination of the ferrule end/optical fiber end that is generally orthogonal to the optical connector plug axis (Br. 17-22). Yamada teaches that it was

well known in the art “that in order to connect optical fibers together while reducing connection loss and reflected returned light, tips of ferrules are ground by perpendicular or inclined spherical grinding to connect the optical fibers together” (¶ 0004). That disclosure would have led one of ordinary skill in the art, through no more than ordinary creativity, to grind orthogonally to reduce connection loss and reflected returned light. *See KSR Int’l. Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007) (In making the obviousness determination one “can take account of the inferences and creative steps that a person of ordinary skill in the art would employ”).

The Appellants argue that the Examiner’s combination of separate embodiments in Yamada’s figs. 6 and 7 is improper because Yamada does not disclose that the figure 7 embodiment relates at all to the embodiments of figures 3 and 6 (Br. 20-21). Yamada’s teaching, in the discussion of figure 7, that the construction described with respect to figure 3 is omitted by giving common numerals or symbols (¶ 0040) indicates that the construction present in figure 3 but omitted from figure 7 is applicable to figure 7.

The Appellants argue that it is unclear what structure in Yamada corresponds to the Appellants’ connecting member (Br. 21-22). The Appellants’ connecting member appears to be latch 145 (Spec. 15-16). Yamada’s corresponding structure is latch 21 (fig. 7). As required by the Appellants’ claim 21, Yamada’s latch 21 is connected to an exterior surface of the plug housing and, as indicated by a comparison of Yamada’s figures 3 and 7, detachably engages with adapter hook 2a which, as pointed out above,

corresponds to the Appellants' engaging member 61.

For the above reasons we are not convinced of reversible error in the rejection of claim 21.

Claim 23

The Appellants argue that Yamada's holding member 4 does not have a holding hole with an engagement portion for detachable engagement with a latch to removably support the optical connector plug (Br. 27). Yamada's adapter 2 (the holding member) has such a holding hole and latch (21) (fig. 7).

We therefore are not persuaded of reversible error in the rejection of claim 23.

DECISION

The rejection of claims 21-24, 28-30 and 35-38 under 35 U.S.C. § 103 over Yamada in view of Ohno is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED

vsh

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